

ABSTRACT

An ultrasonic skin care device has an applicator head for applying the ultrasound vibrations to a user's skin. The applicator head has a vibrator element and a horn which are integrated into a combined vibration mass that resonates with an electric pulse to produce the ultrasound vibrations. The device is configured to limit the ultrasound upon detection that the applicator head is out of a normal contact with the skin. A load detecting circuit detects whether the applicator head is in a normally loaded condition or in an unloaded condition with reference to electrically equivalent impedance of the combined vibration mass. The combined vibration mass has a structure that restrains vibrations at a center portion of the vibration mass in order to reduce an undesired parasitic resonance, thereby enabling to discriminate the impedance given under the normally loaded condition from that given under the unloaded condition.